IN THE CLAIMS

Please substitute the following claims for the pending claims with the same numbers respectively:

Claim 1 (Original): A signal processing unit which calculates the value of v^p, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, and p is a constant, comprising:

an exponent part extraction section which extracts a bit series from said exponent part of said floating point data item;

a mantissa part extraction section which extracts the most significant K bits from said mantissa part of said floating point data item;

a first conversion section which inputs the output e of said exponent part extraction section and outputs the value of a function X(e) thereof;

a second conversion section which inputs the output f of said mantissa part extraction section and outputs the value of a function Y(f) thereof; and

a multiplier section which multiplies together the output

value from said first conversion section and the output value from said second conversion section;

wherein:

when i and j are taken as integers, said function X(i) is a function which returns the value:

X(i)=2^((i-((1<<E-1)-1)-K)*p),

and said function Y(j) is a function which returns the value:

Y(j)=((1<<K)+j)^p.

Claim 2 (Original): A signal processing unit according to claim 1, wherein:

said first conversion section is constituted as a table in which, for each address i, the value of X(i) is stored in advance; and

said second conversion section is constituted as a table in which, for each address j, the value of Y(j) is stored in advance.

Claim 3 (Original): A signal processing unit which calculates the value of v^p, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, and p is a constant, comprising:

an exponent part extraction section which extracts a bit series from said exponent part of said floating point data item;

a mantissa part extraction section which extracts the most significant K bits from said mantissa part of said floating point data item;

a first conversion section which inputs the output e of said exponent part extraction section and outputs the value of a function X(e) thereof;

a second conversion section which inputs the output f of said mantissa part extraction section and outputs the value of a function Y(f) thereof; and

a multiplier section which multiplies together the output value from said first conversion section and the output value from said second conversion section;

wherein:

when i and j are taken as integers, for some real number S, said function X(i) is a function which returns the value:

$X(i)=2^{((i-((1<<E-1)-1)-K)*p)*S}$,

and said function Y(j) is a function which returns the value:

$Y(j)=((1<<K)+j)^{p/S}$.

Claim 4 (Original): A signal processing unit according to claim 3, wherein:

said first conversion section is constituted as a table in which, for each address i, the value of X(i) is stored in advance;

and said second conversion section is constituted as a table in which, for each address j, the value of Y(j) is stored in advance.

Claim 5 (Currently amended): A signal processing unit which, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, when the value of v is greater than or equal to 2.0 and less than 2^N, where N is a natural number, calculates and outputs the value of v raised to ~~the~~ a first power ~~1~~ and converted to an integer value, comprising:

an exponent and mantissa part extraction section which, when the number of bits in which (N-2) is expressed in binary notation is M, extracts a bit field ~~consisting of at least the~~ including a predetermined number of lowermost M bits of said exponent part and ~~at least the~~ a predetermined number of uppermost (N-1) bits

of said mantissa part; and.

a third conversion section which, when the value expressed by said bit field which has been extracted by said exponent and mantissa part extraction section is w, stores in a table in advance the values of v converted into integer values in all the addresses w extracted by this bit field, and which inputs the value w given by said bit field and reads out the corresponding value from said table.

Claim 6 (Original): A signal processing method operable to calculate the value of v^p, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, and p is a constant, comprising the steps of:

extracting a bit series from said exponent part of said floating point data item;

extracting the most significant K bits from said mantissa part of said floating point data item;

inputting the output e of the exponent part extraction and outputting the value of a function X(e) thereof, by storing in a table, for integer values of i, values X(i) to be returned given by 2^((i-((1<<E-1)-1)-K)*p);

inputting the output f of the mantissa part extraction and outputting the value of a function Y(f) thereof, by storing in a table, for integer values of j, values Y(j) to be returned given by ((1<<K)+j)^p; and:

multiplying together the output values of said functions X(e) and Y(f).

Claim 7 (Currently amended): A signal processing method for, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, when the value of v is greater than or equal to 2.0 and less than 2^N, where N is a natural number, calculating and outputting the value of v raised to ~~the~~ a first power ~~1~~ and converted to an integer value, said method comprising the steps of:

~~when the number of bits in which (N-2) is expressed in binary notation is M,~~ extracting a bit field ~~consisting of at least the~~ including a predetermined number of lowermost M bits of ~~said~~ the exponent part and ~~at least the~~ a predetermined number of uppermost (N-1) bits of ~~said~~ the mantissa part when the number of bits in which (N-2) expressed in binary notation is M; and~~:~~

~~when the value expressed by said bit field which has been~~

~~thus extracted is w,~~ storing in a table in advance the values of v converted into integer values in all ~~the~~ addresses where w is extracted by ~~this~~ the bit field, and inputting the value w given by ~~said~~ the bit field and reading out the corresponding value from ~~said~~ the table when the value expressed by the bit field is w.

Claim 8 (Original): A computer readable medium storing instructions for performing a signal processing method operable to calculate the value of v^p, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, and p is a constant, comprising the steps of:

extracting a bit series from said exponent part of said floating point data item;

extracting the most significant K bits from said mantissa part of said floating point data item;

inputting the output e of the exponent part extraction and outputting the value of a function X(e) thereof, by storing in a table, for integer values of i, values X(i) to be returned given by 2^((i-((1<<E-1)-1)-K)*p);

inputting the output f of the mantissa part extraction and

outputting the value of a function Y(f) thereof, by storing in a table, for integer values of j, values Y(j) to be returned given by ((1<<K)+j)^p; and:

multiplying together the output values of said functions X(e) and Y(f).

Claim 9 (Currently amended): A computer readable medium storing instructions for performing a signal processing method for, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, when the value of v is greater than or equal to 2.0 and less than 2^N, where N is a natural number, calculating and outputting the value of v raised to ~~the~~ a first power ~~1~~ and converted to an integer value, said method comprising the steps of:

~~when the number of bits in which (N-2) is expressed in binary notation is M,~~ extracting a bit field ~~consisting of at least the~~ including a predetermined number of lowermost M bits of ~~said~~ the exponent part and ~~at least the~~ a predetermined number of uppermost (N-1) bits of ~~said~~ the mantissa part when the number of bits in which (N-2) expressed in binary notation is M; and~~:~~

~~when the value expressed by said bit field which has been~~

~~thus extracted is w,~~ storing in a table in advance the values of v converted into integer values in all ~~the~~ addresses where w is extracted by ~~this~~ the bit field, and inputting the value w given by ~~said~~ the bit field and reading out the corresponding value from ~~said~~ the table when the value expressed by the bit field is w.

Claim 10 (Original): A program product for performing a signal processing method operable to calculate the value of v^p, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, and p is a constant, comprising the steps of:

extracting a bit series from said exponent part of said floating point data item;

extracting the most significant K bits from said mantissa part of said floating point data item;

inputting the output e of the exponent part extraction and outputting the value of a function X(e) thereof, by storing in a table, for integer values of i, values X(i) to be returned given by 2^((i-((1<<E-1)-1)-K)*p);

inputting the output f of the mantissa part extraction and

outputting the value of a function Y(f) thereof, by storing in a table, for integer values of j, values Y(j) to be returned given by ((1<<K)+j)^p; and:

multiplying together the output values of said functions X(e) and Y(f).

Claim 11 (Currently amended): A program product for performing a signal processing method for, where v is an item of floating point data made up from an E-bit exponent part and an F-bit mantissa part, when the value of v is greater than or equal to 2.0 and less than 2^N, where N is a natural number, calculating and outputting the value of v raised to ~~the~~ a first power ~~1~~ and converted to an integer value, said method comprising the steps of:

~~when the number of bits in which (N-2) is expressed in binary notation is M,~~ extracting a bit field ~~consisting of at least the~~ including a predetermined number of lowermost M bits of ~~said~~ the exponent part and ~~at least the~~ a predetermined number of uppermost (N-1) bits of ~~said~~ the mantissa part when the number of bits in which (N-2) expressed in binary notation is M; and~~:~~

~~when the value expressed by said bit field which has been~~

~~thus extracted is w,~~ storing in a table in advance the values of v converted into integer values in all ~~the~~ addresses where w is extracted by ~~this~~ the bit field, and inputting the value w given by ~~said~~ the bit field and reading out the corresponding value from ~~said~~ the table when the value expressed by the bit field is w.